

REMARKS

The present application was filed on June 15, 2000 with claims 35-56. In the outstanding Office Action dated March 30, 2004, the Examiner: (i) objected to claims 36, 40, 45, 48 and 49; (ii) rejected claims 36-39 and 45-52 under 35 U.S.C. §112, first paragraph; (iii) rejected claims 37-39, 46, 47, 51, 52 and 56 under 35 U.S.C. §112, second paragraph; and (iv) rejected claims 36-56 under 35 U.S.C. §102(e) as being anticipated by WO 98/47302 to Rauhala (hereinafter “Rauhala”).

Regarding the claim objections, Applicants have amended the subject claims to address the concern raised by the Examiner. Accordingly, Applicants respectfully request withdrawal of the claim objections.

Regarding the §112, first paragraph, rejections, Applicants have amended the subject claims to address the concern raised by the Examiner. As illustratively stated in the present specification, at page 2, line 23, through page 3, line 3, in one embodiment of the invention, three new hand-off control messages are defined for use with the packet servers, namely: (i) Continued Call Request, (ii) Continued Call Reply, and (iii) Continued Call Connect. These three new control messages comprise a L2TP control message header, message identifier (e.g., continued call request, etc.), and a number of fields. As a result, the user does not have to terminate the current PPP connection and then re-establish a new PPP connection. The “Continued Call Request” is one example of the “continue call/connection request” recited in the claim. Regarding radius servers, Applicants have amended claim 56 to address any potential ambiguity. Further, it is to be appreciated that “radius servers” are described extensively throughout the present specification. Accordingly, Applicants respectfully request withdrawal of the §112, first paragraph, rejections.

Regarding the §112, second paragraph, rejections, Applicants have amended the subject claims to address the concern raised by the Examiner. Accordingly, Applicants respectfully request withdrawal of the §112, second paragraph, rejections.

Regarding the §102 rejections based on Rauhala, Applicants traverse the rejections based on the assertion that Rauhala fails to teach or suggest all of the limitations in claims 36-56.

It is well-established law that a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Applicants assert that the rejection based on Rauhala does not meet this basic legal requirement, as will be explained below.

Before pointing out the patentable distinctions between the claimed invention and Rauhala, an overall summary of the invention is provided. This summary should facilitate a better understanding of the aspects of the invention recited in the various independent claims of the application. This summary may be found in the present specification at pages 2 and 3.

Typically, access to an Internet Service Provider (ISP) is via a network access server (NAS). The invention realizes that, in an environment such as Personal Communications Service (PCS), tunneling protocols such as the "Point-to-Point Tunneling protocol" (PPTP), "Layer 2 Forwarding" (L2F) protocol, and "Layer 2 Tunneling Protocol" (L2TP) do not allow a remote user on an existing call to change the NAS that is providing access to a VPN. As such, the user's physical mobility may disconnect, or drop, the user from the existing connection.

Therefore, and in accordance with one aspect of the invention, apparatus and methods for transferring packet data provide a "hand-off" feature that allows an existing point-to-point (PPP) connection to be transferred from one packet server to another packet server.

In one embodiment of the invention, three new hand-off control messages are defined for use with the packet servers, namely: (i) Continued Call Request, (ii) Continued Call Reply, and (iii) Continued Call Connect. These three new control messages comprise a L2TP control message header, message identifier (e.g., continued call request, etc.), and a number of fields. As a result, the user does not have to terminate the current PPP connection and then re-establish a new PPP connection.

Advantageously, such a hand-off control message or call continue transaction can be initiated by any of the servers involved in the hand-off scenario. For instance, assume an initial arrangement where a point-to-point call is set up and in progress between a user and a private network via a first packet server (e.g., a first Serving LAC) and a second packet server (e.g., an Anchor LAC). If, for example, the user moves out of the region served by the first packet server into a region served by a third packet server (e.g., a second Serving LAC), then a hand-off control message transaction, according to the invention, is initiated. In accordance with the invention, the second Serving LAC may initiate the call continue transaction or the Anchor LAC may initiate the call continue transaction. Alternatively, in accordance with another aspect of the invention, radius servers respectively associated with the packet servers may be employed to perform the call continue transaction.

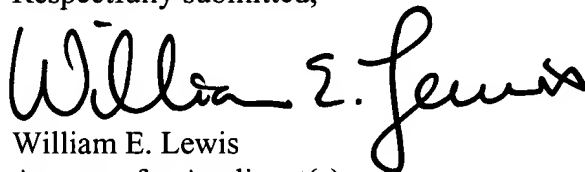
In another aspect of the invention, assuming that a communication path is not yet established between the second packet server (e.g., Anchor LAC) and the third packet server (e.g., the second Serving LAC), a communication path (e.g., tunnel) set-up control message transaction may be performed concurrent with the call continue transaction.

The outstanding Office Action suggests that Rauhala teaches all of the elements of claims 36-56. However, this is not accurate. Rauhala does not disclose maintaining a point-to-point protocol (PPP) connection established in accordance with a tunneling protocol. While Rauhala discloses "avoiding packet loss at handover," Rauhala does not mention anything about maintaining a PPP connection established in accordance with a tunneling protocol. In fact, Rauhala states (see Abstract) that "a necessary connection (13) from the old access point to the new one is established dynamically, when it is required."

The independent claims are also distinguishable over Rauhala based on the unique control message signaling that occurs between packet equipment, servers, etc., in accordance with the PPP connections and tunneling protocols. Rauhala does not disclose such unique control message signaling arrangements in accordance with PPP connections and tunneling protocols.

In view of the above, Applicants believe that claims 35-56 are in condition for allowance, and respectfully request withdrawal of the objections and the §112 and §102(e) rejections.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "William E. Lewis", with a stylized flourish at the end.

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